

Integrated Wavefront Control, Phase I

Completed Technology Project (2006 - 2006)



Project Introduction

NASA is expending a significant amount of effort to develop large imaging telescope systems to explore the Evolution of the Universe (SEU). Adaptive optics will play a large role in these efforts because of the need to produce high quality imaging with lightweight optical systems. Adaptive optics allows the spacecraft designer to sacrifice traditional requirements with regard to weight and stiffness in order to make the spacecraft as light as possible. However, the adaptive systems must be compact and lightweight also. Normal AO systems utilize a series of discrete components to satisfy the correction requirements. These would consist of tip/tilt mirror and deformable mirrors. Xinetics has engaged in developing a series of integrated adaptive optical components that will improve the optical quality of traditional wavefront control systems while simultaneously reducing system volume, weight, and cost. The proposed effort is the result of a strategic vision to develop small robust wavefront control systems designed to be employed in spaced based optical systems. Xinetics proposes designing and building a 1024-ch integrated wavefront corrector using Photonex module technology and Xinetics cofired ceramic actuators.

Primary U.S. Work Locations and Key Partners

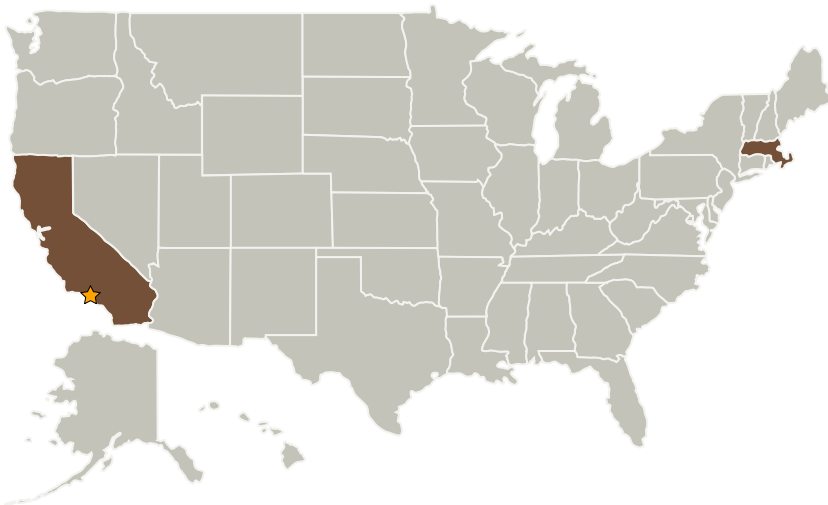
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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Xinetics, Inc.	Supporting Organization	Industry	Devens, Massachusetts

Primary U.S. Work Locations

California	Massachusetts
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.2 Observatories
 - └ TX08.2.1 Mirror Systems